

COMBINED LINEAR-LOGARITHMIC IMAGE SENSOR

Abstract of the Disclosure

An image sensor includes an array of pixels, with each pixel including a photodiode, and a first output circuit for deriving a linear output signal by applying a reset signal to the photodiode and reading a voltage on the photodiode after an integration time. A second output circuit derives a logarithmic output signal by reading a near instantaneous illumination-dependent voltage on the photodiode that is a logarithmic function of the illumination. In the logarithmic mode, the pixels are calibrated to remove fixed pattern noise. The pixels may be operated in linear and log modes sequentially, with the linear output being selected for low light signals and the log output being selected for high light signals.